APR/FY06

FORT DETRICK

Maryland

Army Defense Environmental Restoration Program Installation Action Plan

Final 25 August 2006

Table of Contents

Table of Contents

Statement of Purpose

The purpose of the Installation Action Plan (IAP) is to outline the total multi-year Cleanup Program for an installation. The plan identifies environmental cleanup requirements at each site or area of concern, and proposes a comprehensive, installation-wide approach, with associated costs and schedules, to conduct investigations and necessary remedial actions.

In an effort to coordinate planning information between the restoration manager, US Army Environmental Center (USAEC), Fort Detrick, executing agencies, regulatory agencies, and the public, an IAP was completed. The IAP is used to track requirements, schedules and tentative budgets for all Army installation restoration and compliance cleanup programs.

All site-specific funding and schedule information has been prepared according to projected overall Army funding levels and is, therefore, subject to change. Under current project funding, all remedies will be in place at Fort Detrick by the end of 2008.

The following agencies contributed to the formulation and completion of this Installation Action Plan during a planning workshop held on 25 April 2006:

Baltimore Corps of Engineers

Engineering & Environment, Inc. for USAEC

Fort Detrick

Maryland Department of Environment

RAB Member

SHAW E&I

USACHPPM

USAEC

USAG Fort Detrick

USEPA, Region III

Acronyms & Abbreviations

AEDB-R	Army Environmental Database - Restoration
CAA	Civil Aeronautics Administration
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act of 1980
USACHPPM	US Army Center for Health Promotion and Preventive Medicine (formerly called USAEHA)
COC	Contaminant of Concern
CTC	Cost-to-Complete
DD	Decision Document
DERP	Defense Environmental Restoration Program
USEPA	US Environmental Protection Agency
EPIC	Environmental Photographic Interpretation Center
ER, A	Environmental Restoration, Army (formerly called DERA)
FS	Feasibility Study
FTD	Fort Detrick
FUDS	Formerly Used Defense Site
FY	Fiscal Year
HSC	Health Services Command
IAP	Installation Action Plan
IRA	Interim Remedial Action
IRP	Installation Restoration Program
K	$1000
LTM	Long-Term Management
MCL	Maximum Contaminant Level
MDE	Maryland Department of the Environment
NCI	National Cancer Institute
NFA	No Further Action
NPDES	National Pollutant Discharge Elimination System
NPL	National Priorities List
PAH	Polynuclear Aromatic Hydrocarbons
PA	Preliminary Assessment
PBC	Performance Based Contract
POM	Program Objective Memorandum (budget)
PP	Proposed Plan
PY	prior year
RA	Remedial Action
RA(O)	Remedial Action - Operation
RAB	Restoration Advisory Board
RBC	Risk Based Concentration
RC	Response Complete
RCRA	Resource Conservation and Recovery Act
RD	Remedial Design
REM	Removal
RI	Remedial Investigation

Acronyms & Abbreviations

RIP	Remedy in Place
ROD	Record of Decision
RRSE	Relative Risk Site Evaluation
SARA	Superfund Amendments and Reauthorization Act
SI	Site Inspection
SVOC	Semi-Volatile Organic Compounds
TAPP	Technical Assistance for Public Participation
TCL	Target Compound List
USACHPPM	US Army Center for Health Promotion and Preventive Medicine (formerly called USAEHA)
USACE	US Army Corps of Engineers
USAEC	US Environmental Center (formally called USATHAMA)
USAEHA	US Army Environmental Hygiene Agency (now called USACHPPM)
USATHAMA	US Army Toxic and Hazardous Material Agency (now called USAEC)
USAMRIID	US Army Medical Research Institute of Infectious Diseases
USEPA	US Environmental Protection Agency
UXO	Unexploded Ordnance

Installation Information

Installation Locale: Fort Detrick occupies 1,212 acres of land northwest of and within the boundary of the city of Frederick, Maryland. Fort Detrick consists of four non-contiguous tracts of land designated Area A, Area B, Area C WTP, and Area C WWTP. Area A, the center of Fort Detrick activity, covers 797 acres. Approximately 69 acres of Fort Detrick's Area A were transferred to the National Cancer Institute in 1972, to create the Frederick Cancer Research Facility. Area B, the location of the post's main waste disposal area, covers 399 acres. The Area C water treatment and waste water treatment plants consist of two separate tracts of land along the Monocacy River totaling 16 acres.

Installation Mission: Fort Detrick is a US Army Medical Command installation supporting a multi-governmental community that conducts biomedical research and development, medical materiel management, worldwide communications, and the study of foreign plant pathogens. Each branch of the US military is represented among the approximately 7,800 military, federal, and contractor employees assigned here.

Lead Organization: US Army Medical Command

Lead Executing Agencies:
Performance Based Contract (PBC) - Fort Detrick and US Army Environmental Office
Non-PBCs - Fort Detrick and US Army Corps of Engineers (USACE), Baltimore District

Regulatory Participation
State: Maryland Department of the Environment (MDE) Federal Facilities Division
Federal: US Environmental Protection Agency (USEPA) Region III, Federal Facilities Non-NPL (advisory role only)

National Priorities List (NPL) Status: Not on NPL.

Installation Restoration Advisory Board (RAB)/Technical Review Committee (TRC)/Technical Assistance for Public Participation (TAPP) Status: RAB was established on November 30, 1993 and is still active and meets on a bimonthly basis.

Installation Program Summaries
IRP
Primary Contaminants of Concern: Trichloroethylene (TCE), Perchloroethylene (PCE), Lead, Polyaromatic Hydrocarbons (PAH), and Biological Materials
Affected Media of Concern: Soil, Groundwater
Estimated Date for Remedy-In-Place (RIP)/Response Complete (RC): 2008/2014
Funding to date (up to FY05): $ 39,570 K
Current year funding (FY06): $ 177 K
Cost-to-Complete (FY07+): $ 6,642 K

Installation Historic Activity

Fort Detrick is an active US Army installation operated under the auspices of the U.S. Army Medical Command and houses over 30 tenant organizations, including some non-Department of Defense tenants. These tenants are primarily involved in medical research and development, medical logistics and acquisitions, secure worldwide telecommunications, and reserve activities. Contained within Fort Detrick's Area A is the National Cancer Institute's (NCI) Frederick Cancer Research Center, which was transferred to the Department of Health and Human Services in 1972. Environmental areas of concern located on NCI property were transferred from the Formerly Used Defense Site (FUDS) program to the active IRP on 5 February 1993.

Fort Detrick's beginnings are rooted in 1929, when Frederick County purchased 90 acres of farmland for use as a municipal airport. In 1930, this tract of land was leased to the Maryland National Guard for use as a summer training camp for the 104th Observation Squadron, the first military presence at this site.

Detrick Field was used as a summer training camp until 1940, when by joint agreement of Frederick County and the Maryland National Guard, the field was leased to the U.S. Civil Aeronautics Administration (CAA). The CAA used the field as a pilot training center until the outbreak of World War II.

In 1941, President Roosevelt ordered the establishment of the U.S. Biological Warfare program, and in 1943, Camp Detrick was assigned to the Army Chemical Warfare Service for the development of a Biological Warfare Research Center. The original 90-acre tracts, plus an adjoining 53 acres, were purchased in 1944. By that time, Camp Detrick was well established as an installation for the research and development of offensive and defensive biological warfare techniques and agents.

Camp Detrick was designated a permanent installation shortly after the end of World War II. A seven and a five-acre tract were acquired in 1944 and were respectively developed for use as water and wastewater treatment plants. Collectively, these two tracts are now referred to as Area C. In 1946, 399 acres, now designated as Area B, were acquired to provide an outdoor test area, commonly called the "grid test area." An additional 153 acres adjoining Area A were acquired during 1946 and 1947. The Army acquired an additional 503 acres of land adjacent to the Post in 1952. This land was used primarily for plant science research.

The Flair US Army Reserve Center was constructed in 1955 and 1956 as a separate entity in the northeast corner of Area B. Subsequently, the land transfer reverted to Fort Detrick, and the facility became an on-post tenant in 1958. In 1972, approximately 69 acres of Fort Detrick's Area A were transferred to the National Cancer Institute, to create the Frederick Cancer Research Facility. Permanent technical and installation support facilities were constructed during subsequent years, including major development projects such as the East Coast Telecommunications Center (now the 302nd Signal Battalion, a subordinate of the 21st Signal Brigade) and the U.S. Army Medical Research Institute of Infectious Diseases (USAMRIID).

After the discontinuance of biological warfare activities on April 1, 1972, the control of Fort Detrick was transferred from the U.S. Army Materiel Command to the Office of the

Installation Historic Activity (cont.)

Surgeon General, Department of the Army, and was further assigned as a subordinate installation of the US Army Medical Department. In 1973, Fort Detrick was reassigned from the US Army Surgeon General to the newly created US Army Health Services Command (HSC). In 1995, HSC was reorganized into the US Army Medical Command.

Today, Fort Detrick is a growing installation with the addition of a National Interagency Biodefense Campus as a result of Executive Branch and Congressional direction that addresses leveraging and expanding key competencies to achieve productive and efficient interagency cooperation in support of Homeland Security Biodefense.

IRP

- Prior Year Progress: **Performance Based Contract (PBC) awarded in August 2004.** Sites included in the Fort Detrick PBC are FTD-49 (Area B-11), FTD-50 (Area B-2), FTD-51 (Area B-3), FTD-66 (TCE Spill Site, Area A), FTD-68 (Water Towers, Area A), FTD-69 (Area B-6), FTD-70 (Area B-8, B-18, and trenches north of B-8), FTD-71 (Area B-10 and B-10 Grove), FTD-72 (Area B Groundwater).
- Future Plan of Action: Complete RI and DD for FTD 05, 07, 29, 43. PBC contract to achieve RIP/RC of remaining sites by 200809.

FORT DETRICK

Installation Restoration Program

IRP Summary

Total AEDB-R IRP Sites / AEDB-R sites with Response Complete: 43/30

Active Sites:

PBC sites	*7*
PBC funds tracking site	*1*
Non-PBC (Ft. Detrick and USACE contract sites)	*5*
Total active sites	*13*

Different Site Types:

1 - Aboveground Storage Tanks
1 - Chemical Disposal
3 - Contaminated Groundwater
9 - Landfills
1 - Pesticide Shop
2 - Spill Site Areas
1 - Surface Disposal Area
1 – Wash rack
1 - Waste Treatment Plant
1 - Burn Area
4 - Contaminated Buildings
1 - Explosive Ordnance Disposal Area
7 - Other
1 - Small Arms Range
6 - Storage Areas
1 - Underground Storage Tanks
1 - Waste Lines
1 – PBC funds tracking

Most Widespread Contaminants of Concern: TCE, PCE, Lead, PAH, Biological Materials

Media of Concern: Soil, Groundwater, Surface Water

Completed Removal (REM)/Interim Remedial Action (IRA)/Remedial Action (RA):

FY93-05 – Supplied bottled water to residences: $22K
FY93-99 – Connected Residences to Municipal Water Supply: $70K (complete)
FY00-04 – Interim Removal Action B-11 (FTD-49): $25M (complete)
FY02-05 – Land Use Controls at Water Towers (FTD-68)
FY01-05 – Hydraulic containment of groundwater, Bldg. 568, TCE Spill Site (FTD-66)

Total IRP Funding

Prior years (up to FY05):	$ 39,570K
Current year funding (FY06):	$ 177K
Future Requirements (FY07+):	$ 6,642K
Total:	$ 46,389K

Duration of IRP

Year of IRP Inception:	1992
Year of IRP RIP:	2008
Year of IRP Completion including Long-Term Management (LTM):	2036

IRP Contamination Assessment

IRP Contamination Assessment Overview

Numerous environmental studies have been conducted at Fort Detrick and in the surrounding area to assess and delineate contamination.

In November 1976, an Installation Contamination Assessment of Fort Detrick was performed by Chemical Demilitarization and Installation Restoration office per the direction of USAEC (formerly the US Army Toxic and Hazardous Materials Agency). The Installation Assessment report was finalized in January 1977. There were indications of on-post contamination from biological agents, pesticides, herbicides, and unexploded ordnance (UXO), with the potential of migration. USAEC recommended follow-on studies to define the extent of contamination. The US Health Services Command, however, requested that an ad hoc committee review special hazards associated with drilling in Area B, and a separate analysis of the significant findings to identify any mitigating factors of contaminant source or migration. The Contamination Review Committee did not support a need for follow-on work. The Office of the Surgeon General approved the committee's position in November of 1977.

Following the Installation Assessment, USEPA Region III conducted a Field Investigation of Uncontrolled Hazardous Waste Sites (Preliminary Assessment) in June 1981 in which a site visit and limited interviews were performed. The USEPA report surmised that Area B may have been the disposal area for biological, chemical, radioactive, industrial and munitions wastes. In addition, although buildings in Area A (FTD 01) associated with biological research were decontaminated by the Army, there was a potential for anthrax contamination in some areas. The USEPA report recommended that the State and USEPA monitor the Army's investigations.

In September 1987, the US Army Biomedical Research and Development Laboratory discovered TCE in a groundwater supply well at Area A Building 568. Investigations to determine the source, extent, and degree of contamination were conducted in 1988 through 1993.

In February 1988, Fort Detrick was listed on the Federal Facilities Compliance Docket. During the same year, the Army conducted an Environmental Audit to determine the existence of or potential for environmental contamination and to assess human health and environmental risks associated with the installation.

Advanced Sciences Inc. performed a Preliminary Site Inspection of Fort Detrick in October 1991, utilizing existing sampling and analysis data. The purpose of the report was to score Fort Detrick for possible inclusion on the NPL by using the Hazard Ranking System model. Since the site was not adequately sampled, the report recommended further sampling.

In February 1992, TCE concentrations above the maximum contaminant level (MCL) and elevated levels of trichloroflouromethane were detected in an Area B monitoring well being sampled as part of Fort Detrick's State Landfill permit requirements. Fort Detrick met with the U.S. Army Environmental Hygiene Agency (USAEHA) in March 1992 to discuss the elevated levels. Based on this meeting, USAEHA began a study of the active landfill and Area B that included installation and sampling of monitoring wells. The report was published in February 1993.

IRP Contamination Assessment Overview (cont.)

In October 1992, MDE sampled 21 off-post residential wells adjacent to Area B. TCE concentrations above the MCL levels were identified in four of the tested wells. Following the discovery of TCE in domestic wells, the Army provided bottled water or connected potentially affected residences to public water. One residence was connected to Fort Detrick's drinking water system.

From 1992 through 1993, various investigations were performed to evaluate conditions in Areas A, B, and C, locate potential burial sites, and determine the contamination present at the various areas of concern. Reports included geologic studies, soil gas surveys, geohydrologic studies, a Preliminary Site Inspection, and various groundwater assessments.

From 1994 to present, Remedial Investigations (RI) were performed to assess the nature and extent of contamination and associated potential human health and ecological risks. The RI was conducted in two parts, the Phase I RI and the Phase II RI. Field activities associated with the Phase I RI occurred during 1994 and 1995. Sampling and monitoring operations associated with the Phase II RI occurred in 1997, July 1998 and in October 2000. Phase II test trench and subsequent geophysical and soil-gas surveys identified the Area B TCE and PCE groundwater contamination source in the vicinity of Area B-11. Area A's RI report was completed in June 2000. Since the completion of the Phase II sampling, additional follow-on sampling has occurred in both Areas B and C. Area B's RI has not been completed for all sites. Area C's RI report was completed in December 2004.

In February 2001, a Feasibility Study (FS) was performed to assess remedial alternatives for Area A Groundwater. The Area A groundwater Proposed Plan (PP) was finalized in March 2001. Decision Documents (DD) selecting hydraulic containment of Building 568 groundwater and no further action for seven Area A sites were signed in July 2001. Subsequent to the DD, long-term monitoring has occurred semi-annually starting in May 2002. Mission-funded groundwater production wells are providing hydraulic containment for the site. The Area A TCE plume is no longer migrating off-post above MCLs.

In March 2001, a post operation cleanup was performed at the former Area B skeet range (FTD 29) to excavate, remove, and dispose of lead shot and clay pigeon debris that was dispersed over an area approximately 565,487 square feet. In August 2005, an additional area by the firing line and pigeon throwers was scraped to remove clay pigeon debris missed during the first clean-up action.

During 2001-2004, the Installation performed an interim removal action at Area B-11 (FTD-49) to remove the source of the Area B TCE and PCE groundwater contamination. During this removal action, viable biological material was discovered co-mingled with the excavated hazardous waste. Due to discovery of the viable biological material, Ft. Detrick and the Army have decided to limit intrusive activities into Area B disposal areas due to safety concerns and the associated costs.

In January 2002, a former ash disposal area at the Area C waste water treatment plant was excavated to removal of all visible ash, to the extent practicable, with conventional excavation equipment. Approximately 1,020 cubic yards of overburden, ash and commingled soil were excavated and disposed at the Area B active landfill.

IRP Contamination Assessment Overview (cont.)

A PBC was awarded to Shaw Environmental, Inc. in August 2004. The PBC requires the contractor to achieve "remedy in place" (RIP) for all sites within the scope contract by September 2008. Sites included in the PBC are FTD-49 (Area B-11), FTD-50 (Area B-2), FTD-51 (Area B-3), FTD-66 (TCE Spill Site, Area A), FTD-68 (Water Towers, Area A), FTD-69 (Area B-6), FTD-70 (Area B-8, B-18, and trenches north of B-8), FTD-71 (Area B-10 and B-10 Grove), and FTD-72 (Area B Groundwater).

In June 2005, the Area C waste water treatment plant FS was completed. The PP was finalized in August 2005. A Decision Document implementing institutional controls for the former ash disposal area was signed by the Garrison Commander on 15 December 2005.

Cleanup Exit Strategy:

PBC Sites at Fort Detrick include FTD-49 (Area B-11), FTD-50 (Area B-2), FTD-51 (Area B-3), FTD-66 (TCE Spill Site, Area A), FTD-68 (Water Towers, Area A), FTD-69 (Area B-6), FTD-70 (Area B-8, B-18, and trenches north of B-8), FTD-71 (Area B-10 and B-10 Grove), and FTD-72 (Area B Groundwater).

Non-PBC sites (USACE contract sites) include FTD-05 (Area B Grid), FTD-07 (Area B Ammo), FTD-29 (Area B Skeet), and FTD-43 (Pit 20 Detonation Area). Anticipate completing a RI document followed by a Decision Document recommending no further action.

For FTD-54 (Area C, Wastewater Treatment Plant), a Decision Document implementing institutional controls for the former ash disposal area was signed by the Garrison Commander on 15 December 2005. Signage prohibiting disturbing soil within the former ash disposal area will be installed in FY 2006.

Previous Studies

1975

- USAHSC, Environmental Impact Assessment, Overview of Fort Detrick land use and alternative actions required.

1977

- USCDIR, Record Evaluation Report No. 106, Evaluate documents, interview Fort Detrick staff, and visit site to determine if release may have occurred. Report conclusions are uncertain.

1981

- Ecology & Environment, Inc., Preliminary Assessment of Fort Detrick, A site visit and limited interviews were performed.

1983

- USACE, Study of Proposed Sanitary Landfill Area B, Study of geology and hydrology in Area B to select site for presently operating sanitary landfill.

1984

- USAAA, Report of Audit: Storage and Disposal of Hazardous Materials, An audit of the hazardous waste handling practices at Fort Detrick.

1988

- EA Engineering, Science and Technology, Inc., Report of Phase I Investigations of TCE Contamination, An initial investigation into the TCE spill near Bldg 568 was performed, consisting of a soil gas survey, and water samples taken from Production Well 569 analyzed for VOCs.
- EA Engineering, Science and Technology, Inc., Report of Phase II Investigations of TCE Contamination, Follow-up environmental investigation into TCE contamination at Bldg 568 in Area A: a soil gas survey was performed, monitoring wells were installed, and down-hole sampling of the production well was performed. Samples were analyzed for VOCs.
- USAAA, Report of Audit: Storage and Disposal of Hazardous Materials.
- USAEHA, Environmental Audit No. 38-26-7001-89.

1990

- USAAA, Report No. EC 90-17: Toxic and Hazardous Materials and Wastes Fort Detrick, Maryland.

1991

- USAG, Installation Environmental Assessment.
- USAEHA, Environmental Compliance Assessment System External Assessment No. 37-26-J193-92, Environmental compliance assessment system audit of Fort Detrick.

1992

- USAEHA, Geohydrologic Study No. 38-26-KI32-92 Fort Detrick, Maryland (Phase I and II).

1992 (cont.)

- USACE/Advanced Sciences, Inc., Preliminary Site Inspection, This report is based on a review of existing documents and interviews with Fort Detrick personnel.
- USACE, Work Plan for Site Investigation TCE Contamination-Bldg 568, A work plan for investigations at Bldg 568 in Area A.
- USAEHA, Geohydrologic Study No. 38-26-KF70-93: Area B Fort Detrick, Limited environmental investigation performed in Area B: 11 monitoring wells were installed. These, along with seven existing monitoring wells, were sampled.

1993

- USACE, Site Investigation Report TCE Contamination - Bldg 568, Four monitoring wells were installed and sampled for VOCs, four borings were drilled and sampled for VOCs, and borehole geophysics were performed on three of the monitoring wells and one boring.
- USAEHA/ USAEC, Groundwater Consultation No. 38-26-K1KJ-93 Area B Fort Detrick, Thirty piezometers were sampled for VOCs. Two of the piezometers (26 & 27) were sampled for pesticides and PCBs in addition to VOCs and one (27) was sampled for SVOCs and metals as well. PZ26 was analyzed for herbicides.
- Waterways Experiment Station (USACE), Seismic Refraction and Electromagnetic Surveys at Fort Detrick, Maryland, A geophysical investigation of selected sections of Area B was performed.
- USAEC, No report available, VOC sampling and analysis in sediment and surface water in and around Area B.
- USGS/ USAEC, Final Report on the Findings of the Petrex Soil Gas Survey Performed at the Fort Detrick Area B Site in Frederick, Maryland, Seventy-eight Petrex passive soil gas samplers were installed in Area B. VOC analysis.

1994

- USAEC/ Woodward Clyde, Final Phase I Remedial Investigation Work Plan, Includes the Sampling Design Plan, Accident Prevention and Health and Safety Plan and Quality Assurance Project Plan (including a Data Management Plan) for work completed for the Phase I Remedial Investigation for Fort Detrick Areas A and B.
- USAEC/ERM, Remedial Investigation Data Report, Presents Findings of Phase I RI Efforts at Sites in Area A and Area B.

1998

- USAEC/ICF Kaiser, Remedial Investigation Area B, Draft Document, Provides findings of field investigations along with human health and ecological risk evaluations at various Area B sites.

1999

- USACE/IT, Area C WWTP Expanded Site Investigation, Provides the findings of field investigations along with a preliminary assessment of human health and ecological risk at the Wastewater Treatment Plant.

2000

- USACE/IT, Remedial Investigation Area A, Revised Final Document, Presents findings of field investigations along with human health and ecological risk evaluations at various Area A sites.
- USACE/IT, Area B-11 Chemical Waste Disposal Pits Proposed Plan, Summarizes information provided in the Engineering Evaluation and Cost Analysis to support the recommendation to complete an Interim Removal Action at Area B-11.
- USACE/IT, Feasibility Study, Area A, Evaluates remedial options based on the findings of the Area A RI.

2001

- USACE/IT, RI Area B Water Sampling Data Report, Nov. 1999 – Feb. 2000, Water samples have been collected in Area B and adjacent off-site areas in order to assess the extent of a VOC contaminant plume in the groundwater.
- USEPA, USEPA Aerial Photographic Analysis Fort Detrick (Area B) Site Frederick, Maryland, USEPA aerial photographic analysis of activities at Area B for 1952 through late 80's.
- USACE/IT, Area A Proposed Plan, Final Document, Presents a proposed plan for no further action at seven sites and LTM monitoring for ground water for Area A.
- UNITECH, Fort Detrick Anthrax File Summary, Summarizes available information regarding biological disposal practices in Area B.
- Fort Detrick, Fort Detrick Installation Action Plan – March 2001, Fort Detrick's Installation Action Plan for 2001.
- USACE, Fort Detrick, MD Photogeologic Analysis Amended Final Report, Photogeologic Analysis for Areas A and B
- USACE/IT, Fort Detrick Area A Groundwater Decision Document/Seven No Further Action Sites Decision Document, Final June 2001, Signed Decision Document for no further action at seven sites and LTM monitoring for ground water for Area A.
- USACE, Report on Airborne Geophysical Survey of Fort Detrick, MD Final, August 2001, Aerial testing of passive magnetic and ground penetrating radio waves in Areas A and B.
- USACE/IT, Chemical Oxidation Bench-Scale Test Report, Final, August 2001, Bench scale test report showing effects on area B-11 rock samples after treatment with hydrogen peroxide and potassium permanganate.
- USACE/IT, Final Remedial Investigation Area B, Water Sampling Data Report August 2000 - September 2000, Final November 2001, Water samples have been collected in Area B and adjacent off-site areas in order to assess the extent of a VOC contaminant plume in the groundwater.
- IT Corporation, Fort Detrick Final Preliminary Assessment and Limited Site Investigation for a Site Near a Tributary to Carroll Creek, Report contains Report contains finding on

2001 (cont.)

preliminary assessment and limited site investigation for a site in southern Area B near a tributary to Carroll Creek.

2002

- USACE/IT, Final Remedial Investigation Area B, Water Sampling Data Report Nov – Dec 2000, Final January 2002, Water samples have been collected in Area B and adjacent off-site areas in order to assess the extent of a VOC contaminant plume in the groundwater.
- USACE/IT, Final Remedial Investigation Area B, Water Sampling Data Report Jan - Mar 2001, Final January 2002, Water samples have been collected in Area B and adjacent off-site areas in order to assess the extent of a VOC contaminant plume in the groundwater.
- USACE/IT, Final Remedial Investigation Area B, Water Sampling Data Report Apr - Jul 2001, Final March 2002, Water samples have been collected in Area B and adjacent off-site areas in order to assess the extent of a VOC contaminant plume in the groundwater.
- USACE/IT, Final Remedial Investigation Area B, Water Sampling Data Report Aug - Sep 2001, Final March 2002, Water samples have been collected in Area B and adjacent off-site areas in order to assess the extent of a VOC contaminant plume in the groundwater.
- USACE/IT, Fort Detrick Final Area A Long Term Groundwater Monitoring April 2002 , This plan outlines the requirements for the LTGM as established in the Area A Groundwater Decision Document, and specifies the procedures to be used, 2002.
- USACE/IT, Fort Detrick Final Area A Long Term Groundwater Monitoring Health and Safety Plan - April 2002, This Health and Safety Plan lists guidelines and procedures to be followed during all site-related field activities performed in support of the Area A Long-Term Groundwater Monitoring in order to provide for worker safety.
- USACE/IT, Final Remedial Investigation Area B, Water Sampling Data Report Nov - Dec 2001, Final June 2002, Water samples have been collected in Area B and adjacent off-site areas in order to assess the extent of a VOC contaminant plume in the groundwater.
- USACE/IT, Fort Detrick Area B, Water Sampling Data Report February 2002, Final June 2002, Water samples have been collected in Area B and adjacent off-site areas in order to assess the extent of a VOC contaminant plume in the groundwater.
- USACE/IT, Fort Detrick Area B, Water Sampling Data Report - May 2002, Final September 2002, Water samples have been collected in Area B and adjacent off-site areas in order to assess the extent of a VOC contaminant plume in the groundwater.
- USACE/IT, Fort Detrick Revised Final Area B-11 Disposal Pits Operations Work Plan, September These plans were developed to support the Interim Removal Action for the Area B-11 Disposal Pits. This Work Plan details the organization, personnel, approach and operational methods to be implemented in removal of source contamination at the site. Disk includes: Health and Safety and Emergency Response Plan, Sampling and Analysis Plan, Contractor Quality Control Plan.

2002 (cont.)

- USACE/IT, Fort Detrick Final Area A Long-Term Groundwater Monitoring Design Testing Data Report – November 2002, Report contains data collected during groundwater sampling of selected Area A wells and a water level survey performed as part of a biannual monitoring program designed to evaluate the effectiveness of the current hydraulic containment of the plume.
- USACE/IT, Fort Detrick Area B Water Sampling Data Report August 2002 – November 2002 Final Document, Water samples have been collected in Area B and adjacent off-site areas in order to assess the extent of a VOC contaminant plume in the groundwater.

2003

- USACE/IT, Remedial Investigation, Area B Data Report for Field Efforts Occurring Between February 1998 and December 1999 Final February 2003, This report presents the results of various field activities performed between February 1998 and December 1999 in support of the Area B RI of Fort Detrick (excluding groundwater samples collected in November 1999).
- USACE/IT, Surface Geophysical Survey Report Area B, Sites B-6 and B-8, Final - March 2003, Surface geophysical surveys were conducted at Fort Detrick, Area B sites B-6 and B-8 from October 5 through October 16, 1999. The objective of the geophysical surveys was to locate and define burial pits containing metal debris and animal remains.
- USACE/IT, Fort Detrick Area B Water Sampling Data Report November 2002 – March 2003 Final Document, Water samples have been collected in Area B and adjacent off-site areas in order to assess the extent of a VOC contaminant plume in the groundwater.
- 2003, USACE/IT, Fort Detrick Final Area B-11 Disposal Pits Operations Work Plan, Phase II Activities , May 2003, This addendum to the overall Operation Work Plan for the Area B-11 IRA details the organization, personnel, approach and operational methods to be implemented in removal of source contamination at the site. Disk includes: Health and Safety and Emergency Response Plan, Sampling and Analysis Plan, Contractor Quality Control Plan.
- Shaw E&I Inc., Geophysical Survey Report Proposed NIAID/USAMRIID and NCI Construction Sites, Final - June 2003, Report on geophysical surveys over portions of the proposed NIAID/USAMRIID construction site and also for the proposed NCI construction site in order to determine if buried disposal/fill materials are present which could potentially be of environmental concern.
- Shaw E&I Inc., Trenching Data Report Proposed NIAID/USAMRIID Construction Site, Final - June Report on trenching activities to characterize soils and fill materials and to delimit the extent of the fill materials in a geophysical anomaly found near the NIAID/USAMRIID construction site.
- Shaw E&I Inc., Remedial Investigation, Area B Water Sampling Data Report May/June 2003 Sampling Event, Water samples have been collected in Area B of Fort Detrick and adjacent off-site areas in order to assess the extent of a VOC contamination plume in the groundwater. TCE and PCE have been identified as the major chemical constituents of the contamination plume. As part of an ongoing investigation, groundwater and surface

2003 (cont.)

water sampling occurred in May/June 2003. Water samples were analyzed for the Target Compound List (TCL) VOCs. Isopleth maps for TCE and PCE are presented herein. A brief summary of the laboratory results as well as the validated analytical data are also provided. Groundwater level measurements were taken for Area B wells on May 27, 2003 and are presented in a potentiometric contour map.

- Shaw E&I Inc., Fort Detrick Area A Long-Term Groundwater Monitoring Design Testing Data Report June 2003 Sampling Event, A TCE plume exists in groundwater underlying a portion of Area A and originates from a source near Building 568. The associated remedy selected in the Area A Groundwater Decision Document (USACE, 2001) prescribes that Area A groundwater be extracted and treated such that TCE concentrations above the Federal MCL are not leaving Fort Detrick property. Groundwater sampling of selected Area A wells and a water level survey were performed as part of a biannual monitoring program designed to evaluate the effectiveness of the selected remedy. The second round of groundwater sampling occurred in June 2003 and is discussed herein. Water samples were analyzed for the TCL VOCs. An isopleth map for TCE is presented. A brief summary of the laboratory results as well as the validated analytical data are also provided. The data derived from groundwater level measurements are presented in a potentiometric contour map.

2004

- Shaw E&I Inc., Fort Detrick Area A Long-Term Groundwater Monitoring Design Testing Data Report October 2003 Sampling Event, A TCE plume exists in groundwater underlying a portion of Area A and originates from a source near Building 568. The associated remedy selected in the Area A Groundwater Decision Document (USACE, 2001) prescribes that Area A groundwater be extracted and treated such that TCE concentrations above the Federal MCL are not leaving Fort Detrick property. Groundwater sampling of selected Area A wells and a water level survey were performed as part of a biannual monitoring program designed to evaluate the effectiveness of the selected remedy. The second round of groundwater sampling occurred in October 2003 and is discussed herein. Water samples were analyzed for the TCL VOCs. An isopleth map for TCE is presented. A brief summary of the laboratory results as well as the validated analytical data are also provided. The data derived from groundwater level measurements are presented in a potentiometric contour map.
- Shaw E&I Inc., Remedial Investigation, Area B Water Sampling Data Report October 2003 Sampling Event, Water samples have been collected in Area B of Fort Detrick and adjacent off-site areas in order to assess the extent of a VOC contamination plume in the groundwater. TCE and PCE have been identified as the major chemical constituents of the contamination plume. As part of an ongoing investigation, groundwater and surface water sampling occurred in October 2003. Water samples were analyzed for the TCL VOCs. Isopleth maps for TCE and PCE are presented herein. A brief summary of the laboratory results and the validated analytical data are also provided. Groundwater level measurements were taken for Area B wells on October 24, 2003 and are presented in a potentiometric contour map.

2004 (cont.)

- Environmental Management Division, U.S. Army Garrison, Fort Detrick, Installation Action Plan - Feb 2004, Fort Detrick's Installation Action Plan for 2004
- Shaw E&I Inc., Fort Detrick Area B Background Study Report, Surface and subsurface soil samples from undisturbed portions of Area B of Fort Detrick were collected and analyzed for target analyte list metals. These samples were collected in order to establish background concentrations that can be compared to IRP site samples in Area B. Statistical analyses of the data were performed to compare surface and subsurface soil populations for combination of data sets, and to generate descriptive statistics including the 95% upper confidence level values for each metal. The statistical analyses indicate there exists considerable consistency in population distributions for metals between surface and subsurface soil in both the Alluvial soil data set and the Triassic Shale data set. Detailed summary statistics are presented.
- USACE Baltimore District, Geophysical Investigation Report, Priority Areas 1 through 5 Within Area B Fort Detrick, A geophysical survey was performed using a Geonics EM-61 electromagnetic metal detector in five areas of Ft. Detrick, located in Frederick, Maryland. The survey was performed to investigate for the possible presence of waste disposal areas on the post. The disposal areas are believed to have been filled primarily with general refuse, containing trash and small metal debris.
- Shaw E&I Inc., Area B-11 Chemical Waste Disposal Pits Interim Removal Action Close-out Report, The U.S. Army Corps of Engineers retained Shaw Environmental, Inc. to conduct an interim removal action at Area B-11 at Fort Detrick, Maryland. This removal action commenced in 2001 and was completed in June 2004. The removal action consisted of pit investigation and delineation; removal of soil contaminated with chemical and biological contaminants, chemical containers, compressed gas cylinders, and laboratory waste; characterization and disposal of soils and containers; cylinder disposition activities; and, backfilling of the excavations with clean imported material. This Technical Closure Report summarizes all field activities; evaluates the data collected during the IRA; and, presents all supporting documentation.

2005

- Shaw E&I Inc., Area B Remedial Investigation Water Sampling Data Report, September 2004 Sampling Event, Water samples have been collected in Area B of Fort Detrick and adjacent off-site areas in order to assess the extent of a volatile organic compound VOC contamination plume in the groundwater. TCE and PCE have been identified as the major chemical constituents of the contamination plume. A brief summary of the laboratory results and the validated analytical data are also provided. Shaw E&I Inc., Fort Detrick Area A Long-Term Groundwater Monitoring Design Testing Data Report, September 2004 Sampling Event, A TCE plume exists in groundwater underlying a portion of Area A and originates from a source near Building 568. The associated remedy selected in the Area A Groundwater Decision Document (USACE, 2001) prescribes hydraulic containment of groundwater such that TCE concentrations above the Federal MCL are not leaving Fort Detrick property. Groundwater sampling of selected Area A wells and a water level survey were performed as part of a biannual monitoring program designed to evaluate the effectiveness of the selected remedy. A

2005 (cont.)

brief summary of the laboratory results as well as the validated analytical data are also provided.

- Shaw E&I Inc., Area C Waste Water Treatment Plant Feasibility Study, A FS has been completed for Fort Detrick Area C. The report summarizes the nature and extent of chemicals of concern that exceed cleanup levels in soil and groundwater. General response actions, technology types, and process options are identified and screened. The report includes a detailed and comparative analysis of alternatives for each area retained in the FS screening process. This FS report also presents evidence to support no further action for several of the areas investigated in the Area C RI Report.
- Shaw E&I Inc., Fort Detrick Area A Long-Term Groundwater Monitoring Data Report March 2005 Sampling Event, A TCE plume exists in groundwater underlying a portion of Area A and originates from a source near Building 568. The associated remedy selected in the Area A Groundwater Decision Document (USACE, 2001) prescribes hydraulic containment of groundwater such that TCE concentrations above the Federal MCL are not leaving Fort Detrick property. Groundwater sampling of selected Area A wells and a water level survey were performed as part of a biannual monitoring program designed to evaluate the effectiveness of the selected remedy. A brief summary of the laboratory results as well as the validated analytical data are also provided.
- Shaw E&I Inc., Remedial Investigation, Area B Water Sampling Data Report, December 2004 and February 2005 Sampling Event, Water samples have been collected in Area B of Fort Detrick and adjacent off-site areas in order to assess the extent of a VOC contamination plume in the groundwater. TCE and PCE have been identified as the major chemical constituents of the contamination plume. A brief summary of the laboratory results and the validated analytical data are also provided.
- Shaw E&I Inc., Proposed Plan for Fort Detrick Area C, Five Areas Located at the Wastewater Treatment Plant, This Proposed Plan addresses the following five sub areas that are located at the Area C Waste Water Treatment Plant: 1) Fill Area and Area Surrounding and Downwind of the Former Incinerator Stack; 2) Treatment Plant Process Water; 3) Monocacy River and Unnamed Stream Sediment and Surface Water; 4) Groundwater and 5) Former Ash Disposal Area: The PP lists the preferred alternative of No Further Action for Listed Areas 1 through 4, and Institutional Controls for the Former Ash Disposal Area.
- Shaw E&I Inc., Remedial Investigation, Area B Water Sampling Data Report, March - April 2005 Sampling Event, Water samples have been collected in Area B of Fort Detrick and adjacent off-site areas in order to assess the extent of a VOC contamination plume in the groundwater. TCE and PCE have been identified as the major chemical constituents of the contamination plume. As part of an ongoing investigation, groundwater and surface water sampling occurred in March - April 2005. Water samples were analyzed for the TCL VOCs. Isopleth maps for TCE and PCE are presented herein. A brief summary of the laboratory results and the validated analytical data are also provided. Groundwater level measurements were taken for Area B wells and are presented in a potentiometric contour map.

2005 (cont.)

- Shaw Environmental, Inc., Fort Detrick Remedial Investigation Area B (IRP Site 72) Water Sampling Data Report, July 2005 Sampling Event, Water samples have been collected in Area B of Fort Detrick and adjacent off-site areas in order to assess the extent of a VOC contamination plume in the groundwater. TCE and PCE have been identified as the major chemical constituents of the contamination plume. As part of an ongoing investigation, groundwater and surface water sampling occurred in July 2005. Water samples were analyzed for the TCL VOCs. Isopleth maps for TCE and PCE are presented herein. A brief summary of the laboratory results and the validated analytical data are also provided. Groundwater level measurements were taken for Area B wells and are presented in a potentiometric contour map.
- Shaw Environmental, Inc., Fort Detrick Decision Document for Area C, Five Areas Located at The Wastewater Treatment Plant, This Decision Document presents the Army's selected remedy for IRP Site FTD54 located at the Area C Waste Water Treatment Plant. FTD54 has been further broken into five sub-areas. The Decision Document presents No Further Action for sub areas: 1) Fill Area and Area Surrounding and Downwind of the Former Incinerator Stack; 2) Treatment Plant Process Water; 3) Monocacy River and Unnamed Stream Sediment and Surface Water; and 4) Groundwater. The determinations for No Further Action were based on results of the Human Health and Ecological Risk Assessments. Institutional Controls is the selected remedy for the fifth remaining sub-area, 5) Former Ash Disposal Area. These actions were selected in accordance with the Defense Environmental Restoration Program (DERP) IRP for non-NPL sites, which performs its activities consistent with the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), as amended by the Superfund Amendments and Reauthorization Act (SARA) of 1986, and with the National Oil and Hazardous Substances Pollution Contingency Plan.
- Shaw Environmental, Inc., Fort Detrick Remedial Investigation Area B Water Sampling Data Report, September 2005 Sampling Event, Final Document. Water samples have been collected in Area B of Fort Detrick and adjacent off-site areas in order to assess the extent of a VOC contamination plume in the groundwater. TCE and PCE have been identified as the major chemical constituents of the contamination plume. As part of an ongoing investigation, groundwater and surface water sampling occurred in September 2005. Water samples were analyzed for the TCL VOCs. Isopleth maps for TCE and PCE are presented herein. A brief summary of the laboratory results and the validated analytical data are also provided. Groundwater level measurements were taken for Area B wells on September 12, 2005 and are presented in a potentiometric contour map.
- Shaw Environmental, Inc., Fort Detrick Area A Long-Term Groundwater Monitoring Data Report – September 2005 Sampling Event, Final Document. A TCE plume exists in groundwater underlying a portion of Area A and originates from a source near Building 568. The associated remedy selected in the Area A Groundwater Decision Document (USACE, 2001) prescribes that Area A groundwater be extracted and treated such that TCE concentrations above the Federal MCL are not leaving Fort Detrick property. Groundwater sampling of selected Area A wells and a water level survey were

2005 (cont.)

performed as part of a biannual monitoring program designed to evaluate the effectiveness of the selected remedy. The sixth round of groundwater sampling occurred in September 2005 and is discussed herein. Water samples were analyzed for the Target Compound List (TCL) VOCs. An isopleth map for TCE is presented. A brief summary of the laboratory results as well as the validated analytical data are also provided. The data derived from groundwater level measurements are presented in a potentiometric contour map.

- Shaw Environmental, Inc., Fort Detrick Remedial Investigation Area B Water Sampling Data Report, December 2005 Sampling Event, Final Document. Water samples have been collected in Area B of Fort Detrick and adjacent off-site areas in order to assess the extent of a VOC contamination plume in the groundwater. TCE and PCE have been identified as the major chemical constituents of the contamination plume. As part of an ongoing investigation, groundwater and surface water sampling occurred in December 2005. Water samples were analyzed for the TCL VOCs. Isopleth maps for TCE and PCE are presented herein. A brief summary of the laboratory results and the validated analytical data are also provided. Groundwater level measurements were taken for Area B wells on December 5, 2005, and are presented in a potentiometric contour map.

FORT DETRICK

Installation Restoration Program
Active Site Descriptions

FTD 05
AREA B OUTDOOR SIMULANT TEST GRID

SITE DESCRIPTION

A test grid was installed in Area B (~69 acres) in the late 1940s. The test grid was used to observe the dissemination of biological simulants that were either suspended, air dropped or dispersed as aerosols, with detonation using compressed gas or a small explosive charge. Biological simulants included Serratia marcesens and Bacillus globigii - non-pathogenic microorganisms that are easily detected. It is reported that limited outdoor testing of simulants may have begun as early as 1944. Sampling at the site has detected potentially elevated levels of arsenic that may be naturally occurring.

Additional soil testing occurred in December 2004 to determine levels of arsenic in soil. Results indicated that Arsenic was detected statistically significantly less than background. The Fort Detrick Partnering Team agreed on language for a closure document on 10 May 2005.

STATUS

REGULATORY DRIVER: CERCLA

RRSE: Medium

CONTAMINANTS OF CONCERN: Metals

MEDIA OF CONCERN: Soil

Phases	Start	End
PA	199110	199202
SI	199110	199202
RI/FS	199303	200612

RC DATE: 200612

In September 2005, a draft final closeout document was sent to MDE. In January 2006 discussions, MDE stated that the Army should complete an RI and Decision Document (DD) for this site rather than proceeding with a closeout document since preliminary screening data was insufficient to close it out in the early phases of the investigation and this site was included in a draft Area B Remedial Investigation. MDE also stated that they will not concur with a no further action DD until the first “Action" DD is approved for Area B.

CLEANUP STRATEGY

Fort Detrick will prepare a final Remedial Investigation document and a no further action Decision Document.

FTD 07
AMMUNITION STORAGE AREA (AREA B)

SITE DESCRIPTION

Munitions storage and loading facilities were present on the eastern portion of Area B. Based on this usage, the expected contaminants are explosives and metals. The facilities consisted of eleven aboveground magazines, one earth-covered magazine, and three smaller magazines. The contents were removed and the buildings decontaminated in the 1970s. All the magazines except Building 1215 were dismantled in 1971. The results to date indicate no releases of contaminants above risk-based concentrations of concern. However, several disturbed areas observed during the aerial photographic review by the Environmental Photographic Interpretation Center (EPIC) were noted. In 2004, Fort Detrick collected additional background and five site characterization surface and sub-surface soil samples. The Fort Detrick Partnering Team agreed on 10 May 2005 that agreed that no disposal activity occurred at Area B-Ammo Original and therefore, there is no CERCLA release as a result of disposal activity and closure of the B-Ammo Original is reasonable with no action.

In September 2005, a draft final closeout document was sent to MDE. In January 2006 discussions, MDE stated that the Army should complete an RI and DD for this site rather than proceeding with a closeout document since preliminary screening data was insufficient to close it out in the early phases of the investigation and this site was included in a draft Area B Remedial Investigation. MDE also stated that they will not concur with a no further action DD until the first “Action" DD is approved for Area B.

STATUS

REGULATORY DRIVER: CERCLA

RRSE: Medium

CONTAMINANTS OF CONCERN: Explosives, Metals

MEDIA OF CONCERN: Soil

Phases	Start	End
PA	197610	197701
SI	199110	199202
RI/FS	199303	200612

RC DATE: 200612

CLEANUP STRATEGY

Fort Detrick will prepare a final Remedial Investigation document and a no further action Decision Document.

FTD 29
SKEET RANGE

SITE DESCRIPTION

The skeet range (10 acres) is located in Area B and extends fan-like north of a point in the southwestern corner. The skeet range is no longer in operation and was closed in November 1999. A compliance-funded post operations clean-up for lead debris was completed in March 2001. This operation scraped and removed the top three inches of soil from the areas with the highest lead contamination. Approximately 3,550 cubic yards of soil (5,222 tons) was disposed in Fort Detrick's active landfill. Approximately 60 cubic yards of soil (110 tons) was disposed as hazardous waste off-site. In 2005, surface soil confirmation samples were taken to determine the levels of lead and PAHs in soil. Samples indicated that an area close to the shooting stations contained significant quantities of clay pigeon debris and elevated PAHs. An additional post operations clean-up for pigeon debris was completed in August 2005. Subsequent sampling and risk analysis indicates that there is no longer an unacceptable human or ecological health risk for the site.

In November 2005, a draft final closeout document was sent to MDE. In January 2006 discussions, MDE stated that the Army should complete an RI and DD for this site rather than proceeding with a closeout document since preliminary screening data was insufficient to close it out in the early phases of the investigation and this site was included in a draft Area B Remedial Investigation. MDE also stated that they will not concur with a no further action DD until the first "Action" DD is approved for Area B.

STATUS

REGULATORY DRIVER: CERCLA

RRSE: Medium

CONTAMINANTS OF CONCERN: Lead, PAH

MEDIA OF CONCERN: Soil

Phases	Start	End
PA	197610	197701
SI	199110	199202
RI/FS	199303	200612

RC DATE: 200612

CLEANUP STRATEGY

Fort Detrick will prepare a final Remedial Investigation document and a no further action Decision Document.

FTD 43
PIT 20 DETONATION AREA

SITE DESCRIPTION

There are two explosives burn pits located in Area B, one in the north (B20 N) and the second in the southwest (B20 S) area within the fan of the skeet range. The study at B20 S was completed and absence of significant explosives concentrations or PAHs, indications are that former burning activities at the area have not resulted in site contamination; and that the lack of debris/disposal materials suggests that samples collected were not from a disposal area.

In December 2004, additional samples were taken at B20 North. There were no explosives found in both surface and subsurface samples. For surface soil samples, Arsenic exceeded background and Residential/Industrial RBCs. For subsurface samples, Arsenic was below background, but exceeded Residential/Industrial RBCs. Iron exceeded background and Residential RBC, but was below Industrial RBCs in both surface and subsurface samples. On 10 May 2005, the Fort Detrick Partnering Team agreed on a course of action to complete a closure document.

In September 2005, a draft final closeout document was sent to MDE. In January 2006 discussions, MDE stated that the Army should complete an RI and DD for this site rather than proceeding with a closeout document since preliminary screening data was insufficient to close it out in the early phases of the investigation and this site was included in a draft Area B Remedial Investigation. MDE also stated that they will not concur with a no further action DD until the first “Action" DD is approved for Area B.

STATUS

REGULATORY DRIVER: CERCLA

RRSE: Medium

CONTAMINANTS OF CONCERN: Explosives, Metals

MEDIA OF CONCERN: Soil

Phases	Start	End
PA	197610	197701
SI	197610	197701
RI/FS	199303	200612

RC DATE: 200612

CLEANUP STRATEGY

Fort Detrick will prepare a final Remedial Investigation document and a no further action Decision Document.

FTD 49
CHEMICAL WASTE PITS B-11 (AREA B)

SITE DESCRIPTION

This landfill is a 5.2 acre section of a larger 19.6 acre landfill complex. Sections of this complex were broken out into other AEDB-R sites for administrative purposes {FTD 69 (Area B-6), FTD 70 (Area B-8), and FTD 71 (Area B-10)}. Area B-11 is located on the southwest side of Area B and consists of numerous disposal pits. These pits received wastes from Fort Detrick, the US Bureau of Standards and Walter Reed Army Medical Center. Wastes included metals, general wastes from laboratory modifications, general housing refuse, laboratory chemicals, pesticides/herbicides, drums of TCE/PCE, radiological materials including carbon, sulfur and phosphorus compounds, and medical wastes.

In 1992, TCE contamination was discovered off-post in residential wells above MCLs. Data from the RI indicated that this area was the likely source of the groundwater TCE/PCE plume. An interim removal action was completed in 2004 at four pits within Area B-11. 3300 tons of soil and waste were removed. During excavation, viable bacteria in heat-sealed vials were discovered. This discovery significantly increased the cost and health and safety requirements for this IRA.

STATUS

REGULATORY DRIVER: CERCLA

RRSE: High

CONTAMINANTS OF CONCERN: Acids, Chlorinated Solvents, Biological Materials, Radiological Contamination

MEDIA OF CONCERN: Soil, Groundwater

Phases	Start	End
PA	199110	199202
SI	199110	199202
RI/FS	199303	200704
RD	200407	200805
IRA	200102	200406
RA(C)	200406	200806
RA(O)	200407	200806
LTM	200806	203609

RIP DATE: 200806
RC DATE: 200806

CLEANUP STRATEGY

This site is included in a PBC that was awarded in August 2004. The PBC requires the contractor to achieve “remedy in place” (RIP) for this site by September 2008. The contract period of performance is ten years and encompasses the remedial phases RI/FS, RD, IRA, RA(C), and RA(O). Due to the length of the contract and the nature of a PBC, the phase dates for RD, RA(C) and RA(O) were opened concurrently to meet funding requirements.

The RI/FS and RD documentation for site B-11 may be combined with sites B-8 and B-10. The anticipated remedy is a landfill cap.

FTD 50
LANDFILL B-2 (PKA 1.2 ACRE)

SITE DESCRIPTION

This 1.2-acre landfill is located in the north central portion of Area B. It operated between 1948 and the mid-1970s, receiving unknown quantities of waste (metal, wood, general refuse from laboratory remodeling and building demolition). Four GW monitoring wells located down gradient of the site have contamination above RBCs but below MCLs. There is not enough data to complete a risk assessment. Aerial extent from EPIC study vs. areas sampled show few if any true waste samples. The soil samples taken for the RI did not fully delineate the site.

STATUS

REGULATORY DRIVER: CERCLA

RRSE: Low

CONTAMINANTS OF CONCERN: Metals, Biological Materials

MEDIA OF CONCERN: Soil, Groundwater

Phases	Start	End
PA	199110	199202
SI	199110	199202
RI/FS	199303	200611
RD	200407	200805
RA(C)	200407	200807
RA(O)	200407	200807
LTM	200807	203609

RIP DATE: 200807
RC DATE: 200807

CLEANUP STRATEGY

This site is included in a PBC that was awarded in August 2004. The PBC requires the contractor to achieve RIP for this site by September 2008. The contract period of performance is ten years and encompasses the remedial phases RI/FS, RD, RA(C), and RA(O). Due to the length of the contract and the nature of a PBC, the phase dates for RD, RA(C) and RA(O) were opened concurrently to meet funding requirements.

The anticipated remedy is a landfill cap.

FTD 51
LANDFILL B-3 INACTIVE (PKA 5 ACRE)

SITE DESCRIPTION

B-3, previously known as the 5 acre site, is a 7.3 acre disposal site located on the north side of Area B. Waste disposal activities occurred from 1955 to 1990. From approximately 1970 until 1990, B-3 was the principal repository of waste generated at Fort Detrick. In 1989-90, a new landfill with liner was installed over a portion of B-3.

Area B-3 received unknown quantities of waste (metals, sludge from WWTP, general refuse from laboratory remodeling and building demolition, drums, herbicide/pesticide waste, potential dioxin contamination associated with phenoxy acid herbicides, laboratory glassware and autoclaved animal carcasses and municipal trash. Soil samples were taken, however they do not sufficiently characterize the entire site. There are current data gaps that need to be addressed: aerial extent, and nature.

STATUS

REGULATORY DRIVER: CERCLA

RRSE: Low

CONTAMINANTS OF CONCERN: Metals, Biological Materials

MEDIA OF CONCERN: Soil, Groundwater

Phases	Start	End
PA	199110	199202
SI	199110	199202
RI/FS	199303	200702
RD	200407	200805
RA(C)	200407	200807
RA(O)	200407	200807
LTM	200807	203609

RIP DATE: 200807
RC DATE: 200807

CLEANUP STRATEGY

This site is included in a PBC that was awarded in August 2004. The PBC requires the contractor to achieve RIP for this site by September 2008. The contract period of performance is ten years and encompasses the remedial phases RI/FS, RD, RA(C), and RA(O). Due to the length of the contract and the nature of a PBC, the phase dates for RD, RA(C) and RA(O) were opened concurrently to meet funding requirements.

FTD 54
WASTEWATER TREATMENT PLANT (AREA C)

SITE DESCRIPTION

The wastewater treatment plant, located on Area C, is a gravity-flow system consisting of primary and secondary clarifiers and a trickling filter. It is operated under a NPDES permit. There are several areas under investigation at this location: former ash disposal area, fill area, sludge drying beds, former sludge stockpile area, former mercury seals on trickling filters, and a former incinerator.

The incinerator operated at this site from 1944 to the mid 1960s. The types of material(s) burned in this incinerator are not well documented, but are believed to have included medical waste and general refuse. The incinerator was demolished in 1975. Some ash from the incinerator was disposed adjacent to the incinerator. A compliance-funded action was completed in 2002 to transport the ash to Fort Detrick's active landfill. Residual amounts of ash still remain at the former ash disposal area.

STATUS

REGULATORY DRIVER: CERCLA

RRSE: Medium

CONTAMINANTS OF CONCERN: Metals

MEDIA OF CONCERN: Soil

Phases	Start	End
PA	199110	199202
SI	199110	199202
RI/FS	199303	200512
LTM	200512	203512

RC DATE: 200512

No unacceptable risks for current use were found during the RI, however, elevated hypothetical future risks to child residents exist due to metals.

A DD implementing institutional controls for the former ash disposal area was signed by the Garrison Commander in December 2005.

CLEANUP STRATEGY

Institutional Controls will be put in place for the former ash disposal area. Signage will be put in place in FY06. In the event that the Army sells this property, the site restrictions will be incorporated into any real property documents necessary for transferring ownership from the Army and in a deed restriction for the property.

Five year reviews will be conducted beginning in 2010. The Army will investigate combining the five year review for this site with other five year reviews for the post.

FTD 66
TCE SPILL SITE (AREA A)

SITE DESCRIPTION

This site is located in Area A near Building 568. TCE was used at this building as a refrigerant. The refrigeration system that contained the TCE was removed between 1970 and 1971. There were no visible leaks upon removal. The quantity of TCE, which may have spilled during the filling, operation, or maintenance of these tanks, is unknown; however leaks of mechanical seals were documented as early as 1964. Currently, TCE plume exists in the groundwater. A DD was signed in July 2001 requiring hydraulic containment of the plume and the plume is being monitored to verify that MCLs are not exceeded at the facility boundaries.

A tenant mission-funded groundwater production well (with 1 backup well) is used to supply water for aquatic biological laboratories housed in Bldg 568. The current well usage is providing the required hydraulic containment. The Area A TCE plume is no longer migrating off-post above MCLs.

STATUS

REGULATORY DRIVER: CERCLA

RRSE: High

CONTAMINANTS OF CONCERN:
Chlorinated Solvents

MEDIA OF CONCERN:
Groundwater

Phases	Start	End
PA	199110	199202
SI	199110	199202
RI	199303	200107
LTM	200107	202009

RC DATE: 200107

CLEANUP STRATEGY

The mission-funded groundwater production well will continue to provide the required hydraulic containment.

This site is included in a PBC that was awarded in August 2004. The PBC requires the contractor to perform LTM and five year reviews for the site until 2014. The first five-year review will occur in FY07.

FTD 68
WATER TOWERS (AREA A)

SITE DESCRIPTION

These three water towers are located on Area A. The water towers were painted with lead-based paints. Particles of dried paint were dispersed in the shallow soils surrounding the towers as a result of normal weathering and sandblasting of the towers. Due to the potential for high lead levels in the shallow soils, sampling was performed around each water tower to assess the concentrations of lead and other metals in the shallow soils. Three metals were reported for soil in the area of the Water Towers above background concentrations (chromium (total), lead, and thallium). However, no unacceptable human or ecological risks were determined for these metals.

Based upon the data generated during the RI and institutional controls currently in place at the subject site, Fort Detrick signed a decision document in July 2001 recommending no further remedial action at this site under the ER, A funded IRP.

STATUS

REGULATORY DRIVER: CERCLA

RRSE: High

CONTAMINANTS OF CONCERN: Metals

MEDIA OF CONCERN: Soil

Phases	Start	End
PA	197610	197701
SI	197610	197701
RI/FS	199303	200101
LTM	200103	203609

RC DATE: 200103

CLEANUP STRATEGY

This site is included in a PBC that was awarded in August 2004. The PBC requires the contractor to perform annual reviews of Fort Detrick's institutional controls and five year reviews for the site until 2014. The first five year review will occur in FY07.

FTD 69
AREA B-6

SITE DESCRIPTION

Area B-6 operated from 1952 until 1970. It received unknown quantities of waste including ash, metals, wood and general debris from laboratory remodeling and building demolition; and animal carcasses. Autoclaved carcasses included animals ranging from mice to horses. Animals that were used in special operations involving live biological agents were routinely incinerated prior to burial. Some carcasses may not have been incinerated prior to disposal, but were reportedly autoclaved prior to leaving the laboratory. Surface and subsurface soil samples have been taken, however the site has not been sufficiently characterized. ·In the fall of 2002, field observations of B-6 showed areas with soil erosion and small animal holes, which have uncovered miscellaneous stainless steel objects, laboratory apparatuses, and empty laboratory glassware. Severely eroded areas and animal holes were backfilled with clay.

STATUS

REGULATORY DRIVER: CERCLA

RRSE: Medium

CONTAMINANTS OF CONCERN: Metals, Biological Materials, Lab Chemical Waste

MEDIA OF CONCERN: Soil, Groundwater

Phases	Start	End
PA	199110	199202
SI	199110	199202
RI/FS	199303	200703
RD	200407	200805
RA(C)	200407	200808
RA(O)	200407	200808
LTM	200808	203609

RIP DATE: 200808
RC DATE: 200808

CLEANUP STRATEGY

This site is included in a PBC that was awarded in August 2004. The PBC requires the contractor to achieve RIP for this site by September 2008. The contract period of performance is ten years and encompasses the remedial phases RI/FS, RD, RA(C), and RA(O). Due to the length of the contract and the nature of a PBC, the phase dates for RD, RA(C) and RA(O) were opened concurrently to meet funding requirements.

The anticipated remedy is a landfill cap.

FTD 70
AREA B-8, B-18 AND TRENCHES N OF B-8

SITE DESCRIPTION

Waste burial activities were conducted in Area B-8 from 1948 through 1972. It received unknown quantities of waste including metal, wood, and general debris from laboratory remodeling and building demolition. This area also received autoclaved carcasses of animals ranging from mice to horses. Animals used in special operations, involving live biological agents, were routinely incinerated before burial. Some carcasses may not have been incinerated prior to disposal, but all were reportedly autoclaved prior to leaving the laboratory. Area B-8 also received housing area refuse from 1950 to 1955. In 1971 and 1972, Area B-8 received 150 tons of liquid waste and decontamination plant sludge. The sludge contained viable anthrax spores and was mixed with hypochlorite to kill the anthrax. The sludge was tested for sterility prior to its disposal. Area B-8 also reportedly received radioactive carbon, sulfur, and phosphorus compounds.

STATUS

REGULATORY DRIVER: CERCLA

RRSE: Medium

CONTAMINANTS OF CONCERN: Metals, Biological Materials, Radiological Materials

MEDIA OF CONCERN: Soil, Groundwater

Phases	Start	End
PA	199110	199202
SI	199110	199202
RI/FS	199303	200705
RD	200407	200805
RA(C)	200407	200808
RA(O)	200407	200808
LTM	200808	203609

RIP DATE: 200808
RC DATE: 200808

The Trenches North of Area B-8 consist of depressions, thought to represent abandoned burial trenches. Disposal activities at these locations are unknown. From EPIC study photographs, the trenches appear to have been operated in 1958 and 1970. The trenches are apparent as high conductivity anomalies in a 1993 EM Geophysical Survey. To further characterize possible contamination, surface and subsurface soil samples were collected and analyzed as part of the Phase II field investigation.

Area B-18 represents a former disposal area located in the central western portion of Area B northeast of the three trenches and northwest of Area B-20 South. The location may not have been not accurately documented. Area B-18 was a landfill that received all types of waste and operated until 1950. Historical documents mention no other description of the types of waste that were disposed in Area B-18.

Waste materials were not encountered in any of the borings completed in the area thought to be B-18. A small group of trees near the investigation site for Area B-18 may be the true location of Area B-18. This area contains several sinkholes and a disappearing stream. Within the sinkholes and around the trees are miscellaneous pieces of metal and glass debris.

FTD 70
AREA B-8, B-18 AND TRENCHES N OF B-8

CLEANUP STRATEGY

This site is included in a PBC that was awarded in August 2004. The PBC requires the contractor to achieve RIP for this site by September 2008. The contract period of performance is ten years and encompasses the remedial phases RI/FS, RD, RA(C), and RA(O). Due to the length of the contract and the nature of a PBC, the phase dates for RD, RA(C) and RA(O) were opened concurrently to meet funding requirements.

The RI/FS and RD documentation for B-8 may be combined with sites B-10 and B-11.

A Site Inspection will be performed at Area B-18 to determine whether subsurface waste disposal is present. The inspection will include debris removal and a geophysical survey.

The anticipated remedy for Area B-8, and the trenches North of B-8 is a landfill cap.

FTD 71
AREA B-10 AND B-10 GROVE

SITE DESCRIPTION

Waste burial activities were conducted in Area B-10 from 1958 to 1970. Area B-10 received general housing area refuse and autoclaved, and sometimes incinerated, animal carcasses. The grove of trees surrounding Area B-10, which is referred to as the B-10 Grove, is reported to have been a surface dumping site for unregulated solids; mainly household trash and miscellaneous debris. The quantity and types of waste is unknown. Potential trenches on the east side of the grove have been identified but have not been investigated.

STATUS

REGULATORY DRIVER: CERCLA

RRSE: Medium

CONTAMINANTS OF CONCERN: Metals, Biological Materials

MEDIA OF CONCERN: Soil, Groundwater

Phases	Start	End
PA	199110	199202
SI	199110	199202
RI/FS	199303	200705
RD	200407	200805
RA(C)	200407	200809
RA(O)	200407	200809
LTM	200809	203609

RIP DATE: 200809
RC DATE: 200809

CLEANUP STRATEGY

This site is included in a PBC that was awarded in August 2004. The PBC requires the contractor to achieve RIP for this site by September 2008. The contract period of performance is ten years and encompasses the remedial phases RI/FS, RD, RA(C), and RA(O). Due to the length of the contract and the nature of a PBC, the phase dates for RD, RA(C) and RA(O) were opened concurrently to meet funding requirements.

The RI/FS and RD documentation for B-10 may be combined with sites B-8 and B-11.

The anticipated remedy is a landfill cap.

FTD 72
AREA B GROUNDWATER

SITE DESCRIPTION

All groundwater in Area B was included in this site in FY04. Presently, a TCE/PCE plume extends from Area B-11 in an easterly direction beyond the installation boundary which is approximately one mile away. The exact dimensions of the plume are unknown due in part to the Karst geology. Contamination has been found in off-post drinking water wells, and alternate water sources have been provided.

STATUS

REGULATORY DRIVER: CERCLA

RRSE: Medium

CONTAMINANTS OF CONCERN:
VOCs

MEDIA OF CONCERN:
Groundwater

Phases	Start	End
PA	199211	199312
RI/FS	200407	200708
RD	200407	200808
IRA	199211	200808
RA(C)	200407	200808
RA(O)	200407	200808
LTM	200809	203609

RIP DATE: 200808
RC DATE: 200809

CLEANUP STRATEGY

This site is included in a PBC that was awarded in August 2004. The PBC requires the contractor to achieve RIP for this site by September 2008. The contract period of performance is ten years and encompasses the remedial phases RI/FS, RD, RA(C), and RA(O). Due to the length of the contract and the nature of a PBC, The phase dates for RD, RA(C) and RA(O) were opened concurrently to meet funding requirements.

PBC AT DETRICK

SITE DESCRIPTION

This site identification is used to track funding for a PBC contract. It is not an actual installation restoration site.

Funding covers all PBC work performed at the sites: FTD 49 (Area B-11), FTD 50 (Area B-2), FTD 51 (Area B-3), FTD 66 (TCE Spill Site, Area A), FTD 68 (Water Towers, Area A), FTD 69 (Area B-6), FTD 70 (Area B-8, B-18, and trenches north of B-8), FTD 71 (Area B-10 and B-10 Grove), FTD 72 (Area B Groundwater).

STATUS

REGULATORY DRIVER: N/A

RRSE: N/A

CONTAMINANTS OF CONCERN: VOCs

MEDIA OF CONCERN: N/A

Phases	Start	End
PA	199809	200109
RA(C)	200407	200809
RA(O)	200407	201409

RIP DATE: 200809
RC DATE: 201409

FORT DETRICK

Installation Restoration Program
No Further Action Site Descriptions

IRP No Further Action Sites Summary

AEDB-R #	Site Title	Documentation/Reason for NFA	NFA Date
FTD-01	BLDGs 201, 263, 375, 470	Investigation Completed	199407
FTD-02	Underground Storage Tanks	Investigation Completed	199407
FTD-03	Contaminated Sewer System	Investigation Completed	199407
FTD-04	Aboveground Storage Tank	Investigation Completed	199407
FTD-06	Infectious Materials Storage (Bldg 434)	Investigation Completed	199407
FTD-08	Area A Landfill	Decision Document – No Further Action June 2001	200107
FTD-09	Clean Fill Area (Formerly Construction Debris Landfill)	Decision Document – No Further Action June 2001	200107
FTD-10	Landfill (0.45 Acre)	Investigation Completed	199407
FTD-11	Combustible Burn Pit	Decision Document – No Further Action June 2001	200107
FTD-38	Spray Facility (Bldg 391)	Investigation Completed	199407
FTD-39	Containment Facility (Bldg 374)	Investigation Completed	199407
FTD-46	Incinerator (Bldg 393)	Investigation Completed	199407
FTD-47	Area A Test Area	Investigation Completed	199407
FTD 48	Landfill B-1 (PKA 0.5 Acre)	Area B-1 Installation Restoration Program Site Close-Out Document - October 2004	200503
FTD-52	RAD Waste Storage (Bldg 261)	Investigation Completed	199407
FTD-53	Hazardous Waste Storage (Bldg 1520)	Investigation Completed	199408
FTD-55	USAMRIID Bldgs 1425	Investigation Completed	199407
FTD-56	Fire Protection Division (Bldg 1504)	Investigation Completed	199407
FTD-57	Bldg & Ground Maintenance Shop (Bldg 201)	Investigation Completed	199408
FTD-58	Vehicle Wash Area	Investigation Completed	199407

IRP No Further Action Sites Summary

AEDB-R #	Site Title	Documentation/Reason for NFA	NFA Date
FTD-59	Auto Craft Shop	Investigation Completed Investigation Completed	199407
FTD-60	Generator Building	Investigation Completed	199407
FTD-61	Vehicle Maintenance Shop	Investigation Completed	199407
FTD-62	Car Wash (Wash Rack) Bldg 951	Decision Document – No Further Action June 2001	200107
FTD-63	Water Treatment Plant (Area C)	Investigation Completed	199408
FTD-64	Former Biological Research Labs (32)	Investigation Completed	199407
FTD-65	Pesticide & Herbicide Storage - Bldg 122	Decision Document – No Further Action June 2001	200107
FTD-67	Bldg 1301 - Laboratory Complex	Investigation Completed	200009

FTD-01
BLDGS 201, 263, 375, 470

SITE DESCRIPTION

These buildings were associated with the biological research labs and were the sites of spills of liquid agent containing Anthrax. Tests for Anthrax were negative at the time of the building renovation.

Based on information developed during the PA/SI, no further action is planned for this site under the ER, A funded IRP.

STATUS

RRSE: NE

CONTAMINANTS OF CONCERN:
Biological Agent

MEDIA OF CONCERN:
Soil, Air

Phases	Start	End
PA	197610	197701
SI	197310	197701

RC DATE: 199407

FTD 02
UNDERGROUND STORAGE TANKS

SITE DESCRIPTION

These three different groups of underground storage tanks are located throughout Area A.

Based on information developed during the PA/SI, no further action is planned for this site under the ER, A funded IRP.

STATUS

RRSE: Low

CONTAMINANTS OF CONCERN: POL

MEDIA OF CONCERN:
Soil, Groundwater

Phases	Start	End
PA	199110	199202
SI	199110	199202

RC DATE: 199407

FTD 03
CONTAMINATED SEWER SYSTEM

SITE DESCRIPTION

The active installation laboratory sewer system consists of a cast iron pipe (concrete encased) network.

Based on information developed during the PA/SI, no further action is planned for this site under the ER, A funded IRP.

STATUS

RRSE: NE

CONTAMINANTS OF CONCERN:
Biological Agent

MEDIA OF CONCERN:
Soil

PHASES	Start	End
PA	197610	197701
SI	197610	197701

RC DATE: 199407

FTD 04
ABOVE GROUND STORAGE TANKS

SITE DESCRIPTION

These two different groups of above ground storage tanks are located in Area A.

Based on information developed during the PA/SI, no further action is planned for this site under the ER, A funded IRP.

STATUS

RRSE: NE

CONTAMINANTS OF CONCERN:
POL

MEDIA OF CONCERN:
Air, Surface Water, Soil, Groundwater

PHASES	Start	End
PA	199110	199202
SI	199110	199202

RC DATE: 199407

FTD 06
INFECTIOUS MATERIAL STORAGE (BLDG 434)

SITE DESCRIPTION

Building 434 was used for the storage of infectious materials used for plant research. All wastes in this building were sterilized and incinerated within the building. Waste was then disposed of in a landfill located in Area B. The building has been decontaminated.

Based on information developed during the PA/SI, no further action is planned for this site under the ER, A funded IRP.

STATUS

RRSE: NE

CONTAMINANTS OF CONCERN:
Biological Agent

MEDIA OF CONCERN:
Soil

PHASES	Start	End
PA	199110	199202
SI	199110	199202

RC DATE: 199407

FTD 08
AREA A LANDFILL

SITE DESCRIPTION

This landfill is reportedly located adjacent to Building 538 in Area A and was discovered when buried material was unearthed during road construction in 1952. It is believed the landfill was in operation until approximately 1947. There is no definitive information available as to waste type or quantity. Geophysical investigations have been unable to locate this landfill. Based upon the results of these geophysical investigations, Fort Detrick has signed a decision document in July 2001 recommending no further action at this site under the ER, A funded IRP.

Another landfill on the NCI-Frederick Main Campus was discovered during excavation for construction of Building 535 in 1992. Documentation for the site indicates that 518.93 tons of soil mixed with laboratory glassware, transite (non-friable asbestos-cement board), ash, and other building debris were removed from the landfill. Samples of ash from the site were tested for Toxicity Characteristic metals using appropriate USEPA methodology. No metals were detected. NCI-Frederick, in cooperation with Fort Detrick, disposed of all excavated materials in full compliance with all Federal, state, local, and USAG regulations.

STATUS

RRSE: NE

CONTAMINANTS OF CONCERN:
None

MEDIA OF CONCERN:
None

PHASES	Start	End
PA	199110	199202
SI	199110	199202
RI	199303	199706

RC DATE: 200107

FTD 09
CLEAN FILL AREA (FORMERLY CONST DEBR LF)

SITE DESCRIPTION

This landfill is located in Area A near the main entrance. The Clean Fill Area reportedly received soil, rock, concrete, and other construction-related clean fill material. No records exist which describe the size of the burial area. Therefore, the size and shape of the area has been interpreted based on geophysical survey results.

Based upon the data generated during the RI, Fort Detrick has signed a decision document in July 2001 recommending no further action at this site under the ER, A funded IRP.

STATUS

RRSE: Medium

CONTAMINANTS OF CONCERN:
Building/Road Demolition Debris

MEDIA OF CONCERN:
Soil

PHASES	Start	End
PA	197610	197701
SI	197610	197701
RI	199303	200006

RC DATE: 200107

FTD 10
LANDFILL (0.45 ACRE)

SITE DESCRIPTION

This 0.45-acre landfill is located in the northwest corner of Area B. In 1973, more than 2,500 cubic yards of ash and waste from demilitarization were disposed at this site.

Based on information developed during the PA/SI, no further action is planned for this site under the ER, A funded IRP.

STATUS

RRSE: NE

CONTAMINANTS OF CONCERN: Ash

MEDIA OF CONCERN:
Soil, Groundwater

PHASES	Start	End
PA	197610	197701
SI	199110	199202

RC DATE: 199407

FTD 11
COMBUSTIBLE BURN PIT

SITE DESCRIPTION

This alleged burn pit is located along the eastern boundary of Area A. A map found in the archives shows the planned location, but no evidence exists that this pit was actually constructed. Based on military operations of burn pits during the 1950s, it was assumed that waste oil, solvents, or other petroleum products may have been used to ignite the scrap material if it had been operated.

Based upon the data generated during the RI, a No Further Action DD for this site was signed in July 2001.

STATUS

RRSE: Low

CONTAMINANTS OF CONCERN:
POL

MEDIA OF CONCERN:
Soil

Phases	Start	End
PA	197610	197701
SI	197610	197701
RI	199303	200009

RC DATE: 200107

FTD 38
SPRAY FACILITY (BLDG 391)

SITE DESCRIPTION

This building is located in the western portion of Area A. Building 391 contained three hood compartments used for spray applications of test chemicals on plants. An exhaust system had particulate filters certified to remove 99.97% of particles 0.3 micron or larger and deep-bed charcoal filter to remove chemical vapors.

Based on information developed during the PA/SI, no further action is planned for this site under the ER, A funded IRP.

STATUS

RRSE: NE

CONTAMINANTS OF CONCERN:
Pesticides

MEDIA OF CONCERN:
Soil

Phases	Start	End
PA	197610	197701
SI	197610	197701

RC DATE: 199407

FTD 39
CONTAINMENT FACILITY (BLDG 374)

SITE DESCRIPTION

This building is located in the western portion of Area A. This facility consists of a laboratory and four greenhouse units designed for research on fungal and bacterial plant pathogens under strict quarantine. No chemicals except fumigants or insecticides for control of plant pests are utilized in the facility.

Based on information developed during the PA/SI, no further action is planned for this site under the ER, A funded IRP.

STATUS

RRSE: NE

CONTAMINANTS OF CONCERN:
Pesticides

MEDIA OF CONCERN:
Soil

Phases	Start	End
PA	197610	197701
SI	197610	197701

RC DATE: 199407

FTD 46
INCINERATOR (BLDG 393)

SITE DESCRIPTION

This incinerator system (Bldg 393) was constructed in 1975 to reduce waste. The system is composed of four incinerators, two for pathological or infectious waste and two for general refuse. Ash that is collected is currently disposed in the Area B active municipal landfill. Before the construction of the municipal landfill, ash was disposed in unlined landfills.

Based on information developed during the PA/SI, no further action is planned for this site under the ER, A funded IRP.

STATUS

RRSE: NE

CONTAMINANTS OF CONCERN:
Ash

MEDIA OF CONCERN:
Soil

Phases	Start	End
PA	197610	197701
SI	199110	199202

RC DATE: 199407

FTD 47
AREA A TEST AREA

SITE DESCRIPTION

This simulant test area is located in the eastern portion of Area A. It was used between 1953 and 1955.

Based on information developed during the PA/SI, no further action is planned for this site under the ER, A funded IRP.

STATUS

RRSE: Low

CONTAMINANTS OF CONCERN:
VOCs, PAHs, Metals

MEDIA OF CONCERN:
Soil, Groundwater

Phases	Start	End
PA	197610	197701
SI	197610	197701

RC DATE: 199407

FTD 48
LANDFILL B-1 (PKA 0.5 ACRE)

SITE DESCRIPTION

This 0.5-acre landfill is located on the northeastern portion of Area B. It is an unlined landfill, which operated from the 1948 to mid-70s. The landfill was used to dispose of scrap metals, wood and general refuse from laboratory remodeling and building demolition. Surface and sub-surface soil samples were taken. No waste was found in the borings and no contaminants were found in the soil.
The area B-1, as originally defined, was not located. A Site Close-Out Document was signed in March 2005. Report demonstrates that no disposal activities and no CERCLA releases have occurred in the area designated B-1

STATUS

RRSE: Medium

CONTAMINANTS OF CONCERN:
Metals

MEDIA OF CONCERN: Soil

Phases	Start	End
PA	199110	199202
SI	199110	199202
RI/FS	199303	200503

RC DATE: 200503

FTD 52
RAD WASTE STORAGE (BLDG 261)

SITE DESCRIPTION

Building 261, was an accumulation point for low-level radioactive waste materials, is located in the southern portion of Area A.

Based on information developed during the PA/SI, no further action is planned for this site under the ER, A funded IRP.

STATUS

RRSE: NE

CONTAMINANTS OF CONCERN:
Low Level Radiation

MEDIA OF CONCERN:
Soil, Surface Water, Groundwater

Phases	Start	End
PA	199110	199202
SI	199110	199202

RC DATE: 199407

FTD 53
HAZARDOUS WASTE STORAGE (BLDG 1520)

SITE DESCRIPTION

Building 1520, a former 90-day accumulation point for hazardous wastes that were produced by the post and tenants on the base, is located in the central eastern portion of Area A.

Based on information developed during the PA/SI, no further action is planned for this site under the ER, A funded IRP.

STATUS

RRSE: NE

CONTAMINANTS OF CONCERN:
TPH, BTEX, PAHs, Metals

MEDIA OF CONCERN:
Soil, Groundwater

Phases	Start	End
PA	199110	199202
SI	199110	199202

RC DATE: 199408

FTD 55
USAMRIID BLDGS

SITE DESCRIPTION

These buildings (1425, 1412, and 1414) are used for biomedical research and development in Area A.

Based on information developed during the PA/SI, no further action is planned for this site under the ER, A funded IRP.

STATUS

RRSE: NE

CONTAMINANTS OF CONCERN: Lab Acids, Solvents, Reagents, Scintillation Vials, Biological and Medical Waste

MEDIA OF CONCERN:
Soil, Groundwater

Phases	Start	End
PA	199110	199202
SI	199110	199202

RC DATE: 199407

FTD 56
FIRE PROTECTION DIVISION (BLDG 1504)

SITE DESCRIPTION

The Fire Protection Division provides fire protection and hazardous material emergency response for Fort Detrick. Fire fighting chemicals, which are stored in the Fire Protection Division, are not classified as hazardous.

Based on information developed during the PA/SI, no further action is planned for this site under the ER, A funded IRP.

STATUS

RRSE: NE

CONTAMINANTS OF CONCERN:
None

MEDIA OF CONCERN:
None

Phases	Start	End
PA	199110	199202
SI	199110	199202

RC DATE: 199407

FTD 57
BLDG & GROUND MAINTENANCE SHOP (BLDG 201)

SITE DESCRIPTION

The shop consists of a building with a concrete floor and it is equipped with floor drains that discharge through a grease trap to the sanitary sewer.

Based on information developed during the PA/SI, no further action is planned for this site under the ER, A funded IRP.

STATUS

RRSE: NE

CONTAMINANTS OF CONCERN:
Oils, Solvents

MEDIA OF CONCERN:
Soil, Surface Water

Phases	Start	End
PA	199110	199202
SI	199110	199202

RC DATE: 199408

FTD 58
VEHICLE WASH AREA

SITE DESCRIPTION

The Vehicle Wash Area is a building with a concrete floor. Vehicles are washed with soap and water. Wastewater flows into floor drains and then through the sanitary sewer system to the treatment plant. There appears to be no potential for contamination of environmental media from activities at this location.

Based on information developed during the PA/SI, no further action is planned for this site under the ER, A funded IRP.

STATUS

RRSE: NE

CONTAMINANTS OF CONCERN:
POL

MEDIA OF CONCERN:
Groundwater

Phases	Start	End
PA	199110	199202
SI	199110	199202

RC DATE: 199407

FTD 59
AUTO CRAFT SHOP

SITE DESCRIPTION

This building has a concrete floor equipped with floor drains that drain through a sand filter prior to discharging to the sanitary sewer.

Based on information developed during the PA/SI, no further action is planned for this site under the ER, A funded IRP.

STATUS

RRSE: NE

CONTAMINANTS OF CONCERN:
Solvents, POL

MEDIA OF CONCERN:
Surface Water

Phases	Start	End
PA	199110	199202
SI	199110	199202

RC DATE: 199407

FTD 60
GENERATOR BUILDING

SITE DESCRIPTION

Building 1673 contains emergency electrical generators and boilers. Fuel oil and lubrication oils are stored at the facility for use in the operation of the generators and boilers.

Based on information developed during the PA/SI, no further action is planned for this site under the ER, A funded IRP.

STATUS

RRSE: NE

CONTAMINANTS OF CONCERN:
POL

MEDIA OF CONCERN:
Soil, Surface Water, Groundwater

Phases	Start	End
PA	199110	199202
SI	199110	199202

RC DATE: 199407

FTD 61
VEHICLE MAINTENANCE SHOP

SITE DESCRIPTION

This building has a concrete floor with floor drains that discharge to the sanitary sewer.

Based on information developed during the PA/SI, no further action is planned for this site under the ER, A funded IRP.

STATUS

RRSE: NE

CONTAMINANTS OF CONCERN:
POL, Acids, Solvents

MEDIA OF CONCERN:
Surface Water

Phases	Start	End
PA	199110	199202
SI	199110	199202

RC DATE: 199407

FTD 62
CAR WASH (WASH RACK) BLDG 951

SITE DESCRIPTION

This site, closed in 1995, is a former soap and water vehicle wash rack located in Area A near the site of a former building 951. The former rack was located approximately 80 feet south-west of an existing building 917. Wastewater collected and flowed along a sloping concrete pad, which channeled the water to a drain that discharged through an oil/water separator to the sanitary sewer system. Soil sampling was performed to confirm that no residual contamination was present at or above levels of concern.

Based upon the data generated during the RI, a No Further Action DD for this site was signed in July 2001.

STATUS

RRSE: Low

CONTAMINANTS OF CONCERN:
POL

MEDIA OF CONCERN:
Soil

Phases	Start	End
PA	199110	199202
SI	199110	199202
RI	199303	200006

RC DATE: 200107

FTD 63
WATER TREATMENT PLANT (AREA C)

SITE DESCRIPTION

Fort Detrick owns and maintains a water treatment plant located in Area C along the Monocacy River. The plant operates under the State of Maryland Water Appropriation and Use Permit. Raw water is obtained from surface water intake located on the Monocacy River approximately 225 feet downstream of the intake for the City of Frederick water system. The treatment process consists of pre-chlorination, chemical addition with flash mixing, flocculation, sedimentation, filtration and chlorination. Treated water is stored in two clear wells. The treated water has the pH adjusted and is then pumped into the distribution system on Post.

STATUS

RRSE: NE

CONTAMINANTS OF CONCERN:
Lime, Alum, Chlorine, Fluoride

MEDIA OF CONCERN:
Surface Water, Air

Phases	Start	End
PA	199110	199202
SI	199110	199202

RC DATE: 199408

Based on information developed during the PA/SI, no further action is planned for this site under the ER, A funded IRP.

FTD 64
FORMER BIOLOGICAL RESEARCH LABS (32)

SITE DESCRIPTION

In 1943, seven biological research labs were constructed. By 1969, when research was halted, a total of 32 labs had been constructed. In 1971, the labs were decontaminated and vacated.

Based on information developed during the PA/SI, no further action is planned for this site under the ER, A funded IRP.

STATUS

RRSE: NE

CONTAMINANTS OF CONCERN:
Biological Agent

MEDIA OF CONCERN:
Soil, Air

Phases	Start	End
PA	199110	199202
SI	199110	199202

RC DATE: 199407

FTD 65
PESTICIDE & HERBICIDE STORAGE - BLDG 122

SITE DESCRIPTION

The Pesticide and Herbicide Storage Building (Building 122) is an active facility located in Area A. There are various herbicides and pesticides stored in this building with the largest container having a capacity of approximately five gallons. The facility contains a concrete pad used for pesticide formulation. The room has a bermed floor and secondary containment in the storage area. No releases have been reported at this area. Soil sampling was performed to confirm that no residual contamination was present at or above levels of concern.

Based upon the data generated during the RI, a No Further Action DD for this site was signed in July 2001

STATUS

RRSE: Low

CONTAMINANTS OF CONCERN:
Pesticide, Herbicide

MEDIA OF CONCERN:
Soil

Phases	Start	End
PA	199110	199202
SI	199110	199202
RI	199303	200006

RC DATE: 200107

FTD 67
BLDG 1301 - LABORATORY COMPLEX

SITE DESCRIPTION

This laboratory complex is located in the northern portion of Area A. It is currently operated by the U.S. Department of Agriculture.

US Army Center for Health Promotion and Preventive Medicine (USACHPPM) performed a study to test for potential contamination from a French drain collection system in Bldg 1315. Three borings were taken for a French Drain a pesticide application station. Herbicides, pesticides and VOC's were evaluated. Only three compounds were detected. All three were far below Soil Screening Levels. Based on these findings, the site was removed from further investigation.

STATUS

RRSE: Low

CONTAMINANTS OF CONCERN:
Solvents, Pesticides, Herbicides

MEDIA OF CONCERN:
Soil

Phases	Start	End
PA	197610	197701
SI	197610	197701
RI	199303	200009

RC DATE: 200009

IRP Schedule

Initiation of IRP: 1992

Past Phase Completion Milestones

1977	
•PA/SI Installation	Jan 77
1992	
• Preliminary Site Inspection, Installation wide	Feb 92
• RA Bottled Water/Municipal Water Connections for Residents	Oct 92-Jan 99
1993	
• Site Inspection (FTD 49)	Oct 93
• Initiation of Fort Detrick RAB	Nov 93
1994	
• RI Work Plan	Jun 94
2000	
• Area A RI	Jun 00
2001	
• Area A FS	Jan 01
• Area A PP	Mar 01
• Area A DD	Jul 01
2004	
• IRA (B-11 Interim Removal Action) completed	May 04
• Area C WWTP RI	Dec 04
2005	
• B-1 Site Closeout	Mar 05
• Area C WWTP FS	Jun 05
• Area C WWTP PP	Jul 05
• Area C WWTP DD	Dec 05

Projected Record of Decision (ROD)/Decision Document (DD) Approval Dates: 2007

Schedule for Next Five-Year Review: Planned Review for Bldg. 568, TCE Spill Site (FTD-66), and Land Use Controls at Water Towers (FTD-68) in May 2007

Estimated Completion Date of IRP (including LTM phase): 2036

FORT DETRICK IRP SCHEDULE

(Based on current funding constraints)

AEDB-R#	PHASE	FY07	FY08	FY09	FY10	FY11	FY12	FY13	FY14	FY15+
FTD-05	RI/FS									
FTD-07	RI/FS									
FTD-29	RI/FS									
FTD-43	RI/FS									
FTD-49	LTM									*203609*
FTD-50	LTM									*203609*
FTD-51	LTM									*203609*
FTD-54	LTM									*203512*
FTD-68	LTM									*203609*
FTD-69	LTM									*203609*
FTD-70	LTM									*203609*
FTD-71	LTM									*203609*
FTD-72	IRA									
	LTM									*203609*
PBC	RA(C)									
	RA(O)									

Prior Years Funds

Total Funding up to FY04: 37,778K

Year	Site Information		Expenditures	FY Total
FY 05	RI	FTD 05	$ 2K	
	RI	FTD 07	$ 5K	
	RI	FTD 29	$ 4K	
	RI	FTD 43	$ 9K	
	RI	FTD 49	$ 9K	
	RI	FTD 54	$ 16K	
	LTM	FTD 66	$ 5K	
	RA(C)	PBC	$1705K	
	RA(O)	PBC	$ 35K	
	RAB/TAPP		$ 2K	**$1,792K**

Total Prior Year Funds: $39,570K

Current Year Requirements

Year	Site Information	Requirements	FY Total
FY 06	RI/FS FTD 05, -07, -29, -43	$ 138K	
	RI/FS FTD 72	$ 3K	
	PBC	$ 35K	
	RAB/TAPP	$ 1K	**$177K**

***Total Future Requirements:* $6,642K**

Total IR Program Cost *(from inception to completion of the IRP):* **$46,389K**

Community Involvement

Background: In 1992 Fort Detrick began discussions with political, business, private citizens and environmental interest groups on the concept of establishing a RAB. It was determined by the installation command that establishing a RAB would be beneficial to the community and installation. This was concurred by the entire Army team as well as Federal Facilities Compliance Division, MDE.

Fort Detrick is located within the city limits of Frederick, Maryland (population 48,000) but adjacent to numerous neighborhoods in Frederick County (population approx. 150,000).

Efforts Taken to Determine Interest:

(1) The ensuing public and media interest after discovery of migration of solvents in ground water from Army property culminated in a series of discussions with local political, business, private citizens and environmental interest groups. Discussion of establishing a RAB, then a new concept, was broached. Subsequently, in two public meetings it was evident there was interest.

(2) The concept of the RAB was discussed at an open meeting in Frederick City Hall and members were solicited. Discussion also was carried in local media. In addition, persons calling with questions or concerns were informed of the formation of the RAB and told to contact us if they had an interest in serving. Individual solicitation was made to the most vocal citizens and all but one agreed to serve on the RAB.

Results:

(1) Interested persons were asked to attend a special organization meeting at Fort Detrick. Attendees included installation environmental and safety specialists, members of the U.S. Army Environmental Center Team, representatives from MDE, and one media representative.

(2) Twelve community members agreed to serve and completed the application for membership with the understanding that it was a volunteer effort. The new members then elected a community co-chairman and meetings were scheduled.

(3) Profile of members included local government, lay community members, community members with knowledge of environmental matters, and environmental activists.

Conclusions:

The Fort Detrick Restoration Advisory Board has made a significant impact on the quality and quantity of the remedial investigation and has proved to be a bridge to the community. It has increased our credibility and been effective in overcoming rumor and distrust.

Follow-Up Procedures:

The installation continues to use the RAB as an adjunct to the investigation and has experienced minimal turnover in membership.

Current Status:

There are currently eight community members and eleven members representing the Army and regulatory community. Meetings are held on a bimonthly basis at the US Army Garrison Headquarters (Building 810), Fort Detrick, MD.